REMARKS

Entry of the foregoing, reexamination and further and favorable reconsideration of the subject application in light of the following remarks, pursuant to and consistent with 37 C.F.R. § 1.112, are respectfully requested.

By the foregoing amendment, the specification has been amended to insert to priority data on the first page and to correct several obvious, but inadvertent, typographical errors on page 28. Claims 1-2, 4-5, 7-8, 11-12, 14-16, 21-22, 24-26, 31-32, 34, 36-39, 43-46, and 48-50 have also been amended. Further, claim 51 has been added. Support for the changes to the claims and new claim 51 can be found throughout the originally filed application. Thus, no new matter has been added.

Turning now to the Official Action, claim 38 has been objected to for recitation of "Tris-HCl." Claim 38 has been amended as suggested by the Examiner to overcome this objection.

The Examiner has also objected to the specification for a variety reasons. First, the specification has been objected to because the priority information is allegedly missing. Section 1893.03(c) of the M.P.E.P. indicates that it is not necessary to the first sentence of the application to reference the international application number nor is it necessary to reference foreign priority claims in the specification. Nonetheless, applicants have amended the specification as requested by the Examiner to include reference to the priority claim to the international application which in turn claims priority to two GB foreign priority applications. Second, the specification has been objected to because trademarks are apparently recited without being in all capitalized letters. The specification is being carefully reviewed to determine all of the instances were such trademarks might be used throughout the application and a supplemental amendment will be filed shortly to

include the generic name where appropriate and capitalize where necessary. It is noted that the Examiner has objected to pages 4-5 for recitation of ethylene diamine triacetic acid (EDTA). However, the allegedly improper recitation of such phrase could not be found on pages 4-5. Therefore, the Examiner is respectfully requested to clarify this objection. Third, the specification has been objected to for several misspellings with regard to the term "cysteine". The specification has been amended to correct such misspellings.

Claims 21-22, 37, 47 and 50 have been rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which allegedly was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors had possession of the claimed invention at the time the application was filed. More particularly, the Examiner's objection appears based on the fact that claim 21 does not specify what amino acids the cysteine should be mutated to, whether they should be D or L, *etcetera*. This rejection is respectfully traversed.

Clearly, in a protein, the only amino acids which can be substituted are selected from the 20 L-amino acids which occur naturally. Furthermore, in view of the "special nature" of the cysteine in that it is the only amino acid which forms disulphide bonds, it is not unreasonable to predict that the substitution of this amino acid with any of the other 19 amino acids would disrupt the structure of the protein.

In any event, it is not unreasonable to expect a skilled person to test 19 options to determine those that work. This does not represent an undue burden.

The Examiner has also argued that experimentation is necessary "to determine if the 'component thereof' refers to a component of casein, the milk or caseim containing milk fraction . . . ." Office Action at 5. Applicants respectfully disagree. However, to expedite prosecution in the present application and not to

acquiesce to the Examiner's rejection, claims 22, 37 and 43[1] have been amended to recite "a member [or one or more members] selected from the group consisting of . . . ." A similar amendment has been made to claim 50 for the same reasons discussed above.

In view of the above, withdrawal of the rejection under 35 U.S.C. § 112, first paragraph is believed to be in order and is respectfully requested.

Claims 1-6 and 19-49 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for supposedly failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. This rejection is respectfully traversed.

To expedite prosecution in the present application, and not to acquiesce to the Examiner's rejections herein, applicants have amended the claims to obviate most of the alleged indefinite rejections. Whenever appropriate, the Examiner's suggested wording has been adopted. Applicants note the following items with particularity, including those instances where the Examiner's exact proposed language was not adopted.

With regard to the Examiner's suggested wording for claim 2, it is believed that the applicants' amendment herein, which is based upon the language of present claim 31, is clear and does not make claim redundant.

Applicants have modified claim 7, based upon page 5, lines 34-35 of the specification, to positively recite a process step, and as the specification is addressed to a skilled person, who would understand this step.

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[1] It appears that the Examiner intended to reject claim 43 as opposed to 47 in this regard. If applicants' understanding is not correct then the Examiner is respectfully requested to clarify the rejection as it pertains to claim 47.

As to claims 11, 12 and 34, applicants have amended the claims in a slightly different manner from that suggested by the Examiner. Applicants' amendment is believed to be clear and definite.

With reference to the Examiner's questions regarding claims 14 and 15, applicants emphasize that the "molten globule inducing agent" is NOT the same as the "conversion reagent". The first converts naturally folded α-lactalbumin into the molten globule or apo state, and examples of such agents are EDTA. Once in this state, the α-lactalbumin then requires contact with a "conversion reagent" such as oleic acid, in order to convert it into the biologically active oligomer. These are two distinct stages, utilizing two distinct types of reagent. Simply converting a α-lactalbumin to the molten globule state is not sufficient to arrive at the biologically active oligomer. Therefore, it is believed that the antecedent position with regard to claims 14 and 15 is correct.

The Examiner has queried whether "inactivation" of calcium binding sites is temporary or permanent. In the context of claims 20 and 21, the binding sites must be inactive during the method of claim 1, as the applicants have found that this assists in the conversion process. What happens to them after the material has been converted is immaterial however. Moreover, a skilled person would understand how to inactivate calcium binding sites without express directions. Two methods are given in the specification. Therefore, it should not be necessary to spell these out in the claims. The same applies with respect to claim 47.

With regard to claim 45, the multiple dependency has been amended as suggested by the Examiner. However, the Examiner argues that there is no antecedent basis for an "ion exchange column" and thus suggests reciting an "ion exchange medium." Claim 45 is directed to an ion exchange column. The claimed

column comprises "an ion exchange medium as defined in any one or claims 43 or 44." No antecedent basis is necessary for the column itself as that is what the claim is directed to and there is proper antecedent basis for the medium in the claims from which claim 45 depends. Thus, the Examiner's rejection in this regard does not appear proper.

The Examiner has raised several questions with regard to claim 50. Applicants' amendments to claim 50 are intended to address the Examiner's queries here, and bring the language into line with, for example, claim 1. Further, applicants note, with regard to claim 50, that the inactivation of the calcium binding site is permanent.

In view of the above, the rejections to the claims under 35 U.S.C. § 112, second paragraph, are respectfully requested to be withdrawn.

Lastly, claims 46 and 48-49 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as purportedly being obvious over Jegouic et al. This rejection is respectfully traversed.

For prior art to be anticipatory, every element of the claimed invention must be disclosed in a single item of prior art in the form literally defined in the claim. *See, e.g., Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 231 USPQ 81, 90 (Fed, Cir. 1986). Regarding the instant rejection, applicants note with emphasis that Jegouic et al. fails to mention or contemplate the use of "a conversion reagent selected from the group consisting of fatty acids or lipids, wherein said fatty acids and lipids are found in a milk fraction containing casein obtained from human milk."

Contrary to what appears to be the Examiner's view, the conversion reagent is not the same as the molten globule-inducing agent. The biologically active oligomeric form of α-lactalbumin is not obtainable simply by contacting molten

globule α-lactalbumin with an ion exchange column. The presence of the claimed conversion reagent, selected from the group consisting of fatty acids or lipids, wherein said fatty acids and lipids are fond in a milk fraction containing casein obtained from human milk, is required by the claims to be included in the production of this product.

Since Jegouic et al. fails to teach every element of the claimed invention, Jegouic et al. cannot be considered anticipatory prior art.

With regard to the alternative rejection under 35 U.S.C. § 103(a), it is noted that every element of the claimed invention must still be taught or suggested by Jegouic et al. in combination with or modified with the contemporary knowledge in the field. The Examiner has asserted that Jegouic et al. utilizes reducing thiols. However, the Examiner has not established that the contemporary knowledge in the field in anyway suggests using the claimed conversion reagent (that is "a conversion reagent selected from the group consisting of fatty acids or lipids, wherein said fatty acids and lipids are found in a milk fraction containing casein obtained from human milk") in place of reducing thiols in the process described by Jegouic et al.

Accordingly, a proper prima facie case of obviousness has not been established.

Since Jegouic et al. fails to anticipate or render obvious the claimed invention, withdrawal of this rejection under 35 U.S.C. § 102(b)/35 U.S.C. § 103(a) is respectfully requested to be withdrawn.

In view of the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order. Such action is earnestly solicited.

In the event that there are any questions relating to this Reply, or the application in general, it would be appreciated if the Examiner would telephone the undersigned attorney concerning such questions so that the prosecution of this application may be expedited.

Respectfully submitted,

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